



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,820	11/26/2001	Katsuya Nagayama	50212-313	6026
7590 04/26/2004 McDERMOTT, WILL & EMERY 600 13th Street, N.W. Washington, DC 20005-3096			EXAMINER HUG, ERIC J	
			ART UNIT 1731	PAPER NUMBER

DATE MAILED: 04/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

164

<b>Office Action Summary</b>	<b>Application No.</b> 09/991,820	<b>Applicant(s)</b> NAGAYAMA ET AL.	
	<b>Examiner</b> Eric Hug	<b>Art Unit</b> 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 February 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 5-8 is/are allowed.  
6) ☒ Claim(s) 10 and 11 is/are rejected.  
7) ☒ Claim(s) 1-4, 9, 12 and 13 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 26 November 2001 and 19 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendment***

The following is in response to the amendment filed on February 19, 2004.

***Drawings***

The substitute drawing for Fig.2 was received on February 19, 2004. This drawing is acceptable.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4, 9, 12, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Bailey et al (US 4,396,409).

Bailey discloses a drawing furnace 14 with a first atmosphere for drawing an optical fiber 10 from a preform 12, an annealing furnace 16 with a second atmosphere, and a coating device 18, whereby the annealing furnace is located between the drawing furnace and the coating device. There is also a gap between the drawing furnace and the annealing furnace. The annealing is performed in an annealing furnace having an inert gas flowing through and having a temperature of 900-1300 degrees C, which overlaps the claimed range of 1200-1700 degrees C. The furnace has a tubular chamber 24, gas inlet pipe 26, and gas outlet pipe 28, thus providing downward flow. The gas may be air or nitrogen. The chamber can also be omitted providing for air to flow naturally through the furnace, thus providing a gas mixing zone between the drawing

Art Unit: 1731

furnace and the heating furnace. Therefore Bailey discloses the claimed drawing furnace, heating (annealing) furnace, gap, mixed gas layer, and operating temperatures.

Bailey reads on all the elements of method claims 9 and 12 as described above. Bailey also reads on all the structural features of apparatus claims 1-4 and 13. The non-structural features of claims 1-4 and 13, namely the gas composition and the temperature within the heating furnace, do not structurally distinguish the present invention from the prior art. Apparatus claims must be structurally distinguishable from the prior art (MPEP 2114). The manner of operating the apparatus also does not distinguish it from the prior art.

2. Claims 1-4, 9, 12, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohga et al (US 5,320,658).

Ohga discloses a device for drawing, heat treating, and coating an optical fiber whereby a heating furnace is provided between a drawing furnace and a coating device. The heating furnace is provided to minimize fiber attenuation resulting from fast cooling. The drawing furnace comprises an inert gas inlet 106 at the top for supplying gas to the drawing furnace, and comprises an outlet at the bottom for passage of the drawn fiber and the gas. A shutter 108 is provided at the bottom of the drawing furnace to maintain the inert atmosphere in the furnace (i.e. keep the interior separated from outside ambient air). The heating furnace comprises a muffle tube kept in an atmosphere of inert gas, oxygen, or hydrogen. The heating furnace is provided with a gas inlet 109 at the top and a gas outlet at the bottom. There also exists a gap between the two furnaces which would inherently provide a gas mixing zone between the drawing furnace and the heating furnace. The temperature within the heating furnace is kept at

500-1500 degrees C which reads on the claimed temperature ranges. Coating device 111 immediately follows the heating furnace.

Ohga reads on all the elements of method claims 9 and 12 as described above. The combination of devices reads on the structural features of claims 1-4 and 13. The non-structural features of claims 1-4 and 13, namely the gas composition and the temperature within the heating furnace, do not structurally distinguish the present invention from the prior art. Apparatus claims must be structurally distinguishable from the prior art (MPEP 2114). The manner of operating the apparatus also does not distinguish it from the prior art.

***Allowable Subject Matter***

Claims 5-8 are allowed.

Claims 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 5-8 are allowed for at least providing the feature of the second gas having a thermal conductivity less than the first gas.

Claim 10 is allowable for at least providing the feature of a barrier for separating the gas mixture layer from the outside air.

Claim 11 is allowable for the same reasons that claims 5-8 are allowed.

***Response to Arguments***

Applicant's arguments have overcome the objection to the specification presented previously.

The translation of the foreign priority was received on February 19, 2004. This overcomes all previous rejections based on Okubo JP 2000-128566.

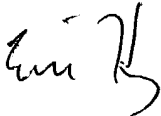
Applicant's argument are persuasive regarding all rejections of claims 5-8 set forth previously. None of the applied combinations of references arrives at the present invention.

Applicant's arguments do not address the rejections of claims 9, 12, and 13 set forth previously. These claims do not comprise the limitation of a second gas having a lower conductivity than the first gas. However, the previous rejections are now moot in view of the new rejections set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 571 272-1192. The examiner can normally be reached on Monday through Friday, 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
jeh